

IN THE SPECIFICATION:

Please replace page 4, line 8 through page 10, line 7, as follows.

--An object of the present invention is to provide a fixing apparatus capable of changing a rate for restoring a temperature of a heat generating member (or a heating member) to a target temperature by changing an electric power supplied to a magnetic flux generation means (or a heating means) depending on information as to an image density on a recording material without changing the target temperature of the heat generating member (or the heating member).

Another object of the present invention is to provide a fixing apparatus capable of ensuring energy saving by reducing a power consumption when a low-density image requiring less supplied power than a high-density image is fixed and capable of alleviating a lowering in temperature (or increasing a rate for restoring a temperature to a target temperature) with respect to a heat generating member (or a heating member) when the high-density image causing a larger temperature lowering after fixation compared with the low-density image is fixed.

A further object of the present invention is to provide a fixing apparatus capable of ensuring energy saving by reducing power consumption when an image of a single color requiring a less supplied power than an image of a plurality of colors is fixed and capable of alleviating a lowering in temperature after the image of the plurality of colors is fixed, by changing an electric power supplied to a magnetic flux generation means (or a heating means) depending on whether an image to be formed on a recording material is the image of the single color or the image of the plurality of colors.

According to an aspect of the present invention, there is provided a fixing apparatus, comprising:

magnetic flux generation means for generating a magnetic flux,  
a heat generating member for generating heat by the magnetic flux generated  
by the magnetic flux generation means to heat an unfixed image on a recording material,  
detection means for detecting a temperature of the heat generating member,  
electric power supply means for supplying an electric power to the magnetic  
flux generation means so that a temperature of the heat generating member is close to a target  
temperature, on the basis of a detection result of the detection means, and  
electric power change means for changing the electric power supplied to the  
magnetic flux generation means without changing the target temperature, on the basis of  
information on a density of an image formed on the recording material,  
wherein when the density of the image formed on the recording material is  
high, the electric power change means increases the electric power supplied to the magnetic flux  
generation means, compared with a case where the density of the image formed on the recording  
material is low.

According to another aspect of the present invention, there is provided a fixing  
apparatus, comprising:

a heating member for heating an unfixed image on a recording material,  
heating means for heating the heating member,  
detection means for detecting a temperature of the heating member,  
electric power supply means for supplying an electric power to the heating  
means so that a temperature of the heating member is close to a target temperature, on the basis  
of a detection result of the detection means, and

electric power change means for changing the electric power supplied to the heating means without changing the target temperature, on the basis of information on a density of an image formed on the recording material,

wherein when the density of the image formed on the recording material is high, the electric power change means increases the electric power supplied to the heating means, compared with a case where the density of the image formed on the recording material is low.

According to a further aspect of the present invention, there is provided a fixing apparatus, comprising:

magnetic flux generation means for generating a magnetic flux,

a heat generating member for generating heat by the magnetic flux generated by the magnetic flux generation means to heat an unfixed image on a recording material,

detection means for detecting a temperature of the heat generating member,

electric power supply means for supplying an electric power to the magnetic flux generation means on the basis of a detection result of the detection means, and

electric power change means for changing the electric power supplied to the magnetic flux generation means,

wherein when an image formed on the recording material is formed of toners of a plurality of colors, the electric power change means increases the electric power supplied to the magnetic flux generation means, compared with a case where the image formed on the recording material is formed of toner of a single color.

According to a still further aspect of the present invention, there is provided a fixing apparatus, comprising:

a heating member for heating an unfixed image on a recording material,

heating means for heating the heating member,

detection means for detecting a temperature of the heating member,

electric power supply means for supplying an electric power to the heating means on the basis of a detection result of the detection means, and

electric power change means for changing the electric power supplied to the heating means,

wherein when an image formed on the recording material is formed of toners of a plurality of colors, the electric power change means increases the electric power supplied to the heating means, compared with a case where the image formed on the recording material is formed of toner of a single color.--

Please amend the paragraph beginning at page 10, line 15 and ending at line 16, as follows.

--Figure 3 is a ~~black~~ block diagram of a control system.--

Please amend the paragraph beginning at page 11, line 24 and ending at page 12, line 5, as follows.

--The printer section I includes a photosensitive drum 1, as an image bearing member, which is rotationally driven in a direction ~~o~~ of an arrow R1. Around the photosensitive drum 1, a primary charger (charging means) 2, an exposure means 3, a developing apparatus

(developing means) 4, a transfer apparatus 5, a cleaning device 6, and a pre-exposure lamp 7 are disposed in this order along its rotation direction.--

Please amend the paragraph beginning at page 15, line 18 and ending at line 26, as follows.

--The paper supply and conveyance unit 8 includes a plurality of paper supply cassettes 8a for stacking and accommodating recording materials P different in size, paper supply rollers 8b for feeding the recording materials P from the paper supply cassettes 8a, a multitude of conveyance rollers, and a registration roller 8c ~~8e~~. The paper supply and conveyance unit 8 feeds the recording material 8 in a predetermined size to the transfer drum 5a.--

Please amend the paragraph beginning at page 16, line 13 and ending at line 22, as follows.

--The paper output unit 11 includes a conveyance path switching guide 11a, a discharge roller 11b, a paper output tray 11c, etc., disposed downstream from the fixation device 10. Below the conveyance path switching guide 11a, in order to effect double-sided image formation to one recording material P, a conveyance vertical path 11d, an inversion path ~~11e~~, a stacking member 11f, an intermediary tray 11g, conveyance rollers 11h and 11i, an inversion roller ~~11j~~, etc., are disposed.--

Please amend the paragraph beginning at page 16, line 23 and ending at page 17, line 3, as follows.

--Further, between the primary charger 2 and the developing apparatus 4 at a peripheral surface of the photosensitive drum 1, a potential sensor S1 for detecting a charged potential of the photosensitive drum surface is disposed. Between the developing apparatus 4 and the transfer drum 5a, a density sensor S2 ~~82~~ for detecting a density of the toner image on the photosensitive drum 1 is disposed.--

Please amend the paragraph beginning at page 21, line 9 and ending at line 21, as follows.

--On the transfer drum 5a after separating the recording material P therefrom, in order to prevent scattering and attachment of toner powder (particle) onto the photosensitive member carrying sheet 5g and attachment of oil onto the recording material P, a cleaning operation is performed by a fur brush 13a ~~14a~~ and a backup brush 13b disposed opposite from each other via the recording material carrying sheet 5g and by an oil removal roller 14a and a backup brush 14b disposed opposite from each other via the recording material carrying sheet 5g. The cleaning operation is performed before or after the image formation or at any time of occurrence of paper jam.--

Please amend the paragraph beginning at page 25, line 8 and ending at page 26, line 14, as follows.

--To the exciting coil ~~oil~~ 38, an AC current of 10 - 100 kHz is applied by the high-frequency converter 41. The magnetic flux induced by the AC current passes through the inside of the E-shaped magnetic core without leaking out, and first leaks out the outside of the

magnetic member between the projection portions. As a result, an eddy current passes through the electroconductive layer per se generated Joule heat. More specifically, the fixation roller 10a is subjected to electromagnetic induction heating, and supplied electric power to the exciting coil 38 is controlled, depending on an output of the temperature sensor 33, by the temperature control circuit 40 and the high-frequency converter 41. As a result, the temperature of the fixation roller 10a is temperature-controlled to a predetermined temperature. More specifically, in the case where the temperature control circuit judges that a difference between the output value of the temperature sensor 33 and a predetermined fixation temperature is small, the high-frequency converter 41 applies a high-frequency AC current to the exciting coil 38. On the other hand, in the case where the temperature control circuit judges that the output value of the temperature sensor 33 is higher than the predetermined fixation temperature, the high-frequency converter 41 stops the application of AC current to the exciting coil 38. Herein, the temperature control method is not limited to the above-mentioned method but may be performed by, e.g., ON/OFF control of energization while fixing electric power (frequency) to effect temperature control to a predetermined temperature.--

Please amend the paragraph beginning at page 29, line 4 and ending at line 8, as follows.

--First, the output signal from the pulse width modulation circuit 55 described above is supplied to one of inputs of an AND gate 60. The other input of the AND gate 60. The other input of the AND gate 60 is supplied with a clock pulse (shown in Figure 4(b)) from a clock pulse oscillator 61.--

Please amend the paragraph beginning at page 29, line 9 and ending at line 15, as follows.

--As a result, as shown in Figure 4(c), from the AND gate ~~at~~ 60, such a clock pulse including portions pulse number of which corresponds to the respective pulse widths of the laser-driven pulses S, I and W, respectively, i.e., a clock pulse including portions corresponding to image densities of the respective pixels, is outputted.--

Please amend the paragraph beginning at page 33, line 8 and ending at line 22, as follows.

--Referring to Figure 5, the fixation device includes a holding member 31, an induction heating member 32, such as iron plate, downwardly fixed and held by the holding member 31, a heat-resistant fixation film 33a ~~33~~ which is slidably movable to the lower surface of the fixed induction heating member 32, and an elastic pressure roller 10b. The elastic pressure roller 10b is pressed against the lower surface of the induction heating member 32 through the heat-resistant fixation film 33a ~~33~~ to form a nip portion N. The induction heating member 32 generates heat by electromagnetic induction heating by the action of magnetic flux created by magnetic flux generation means 36 comprising an exciting coil 38 and a magnetic core 39.--

Please amend the paragraph beginning at page 33, line 23 and ending at page 34, line 7, as follows.

--A recording material P carrying thereon an unfixed toner image t is guided to the nip portion N between the heat-resistant fixation film 33a ~~33~~ and the pressure roller 10b and



conveyed in the nip portion N while being sandwiched therebetween, whereby the toner t absorbs heat from the induction heating member 32 through the heat-resistant fixation film 33a 33, thus being heated and pressed to be fixed on the surface of the recording material P. The recording material P after being passed through the nip portion N is successively separated from the surface of the heat-resistant fixation film 33a 33 and then is conveyed for discharge.--